

What is claimed is:

1. A media transfer apparatus comprising:

at least one storage device; and

a controller configured for bidirectionally transferring video data between a plurality of nodes and said at least one storage device.

2. The media transfer apparatus of claim 1, wherein said at least one storage device includes a hard drive unit.

3. The media transfer apparatus of claim 1, wherein said controller comprises:

a first subcontroller configured for regulating transfer of data flows defining said video data;

a processor in communication with said first controller for communicating instructions to said first controller; and

a second subcontroller configured for controlling said transfers between said first subcontroller and said at least one storage device.

4. The media transfer apparatus of claim 3, wherein said at least one storage device includes a hard drive unit.

5. The media transfer apparatus of claim 3, wherein said processor includes a RISC processor.

6. The media transfer apparatus of claim 3, wherein said second subcontroller includes an ATA controller.

7. The media transfer apparatus of claim 3, additionally comprising at least one buffer in communication with said controller.

8. The media transfer apparatus of claim 3, wherein said controller additionally comprises: a plurality of paired FIFO buffers, each of pair of FIFO buffers corresponding to one of said plurality of nodes.

9. The media transfer apparatus of claim 8, additionally comprising an encoder in communication with one FIFO of said paired FIFOS and a decoder in communication with said other FIFO of said paired FIFOS.

10. The media transfer apparatus of claim 8, wherein at least one of said nodes is configured for receiving and sending signals corresponding to either of the playing or recording of video data.

11. The media transfer apparatus of claim 8, wherein at least one of said nodes is configured for supporting a workstation.

12. A data transfer system comprising:

a system residing on at least one chip, said system configured for bidirectionally transferring digital media data between a plurality of nodes and at least one storage media.

13. The data transfer system of claim 12, wherein said at least one chip is a Very Large Scale Integration (VLSI) device.

14. The data transfer system of claim 13, additionally comprising, a storage media buffer, and said VLSI device is configured for performing said bidirectional digital media data transfers with said storage media buffer.

15. The multichannel media transfer device of claim 12, additionally comprising at least one storage media.

16. The data transfer system of claim 13, wherein said at least one chip includes one chip.

17. The data transfer system of claim 13, wherein said VLSI device is additionally configured for real time multichannel recording of independent video streams onto said single hard drive unit and real time multichannel playback of

independent video streams from said hard drive unit, said recording and playback being at least contemporaneous in time.

18. The data transfer system of claim 13, wherein said VLSI device includes:

5 a controller configured for regulating transfer of said digital media data;
 a processor in communication with said controller for communicating instructions to said controller; and
 a storage media interface configured for controlling said transfers between said controller and said at least one storage media.

10 19. The data transfer system of claim 18, wherein said processor includes a RISC processor.

15 20. The data transfer system of claim 13, wherein said VLSI device additionally comprises: a plurality of paired FIFO buffers, each of pair of FIFO buffers for correspondence with one of said plurality of nodes.

20 21. The data transfer system of claim 12, wherein said digital media data is selected from the group comprising: video data, audio data or combinations thereof.

22. A method for transferring video data between plurality of nodes corresponding to channels, and at least one storage device, comprising:

25 monitoring at least one cue for entry of at least one predetermined command;

 activating at least one of said plurality of channels in accordance with said at least one predetermined command being entered, and

 if said at least one predetermined command has not been entered,

 determining if at least one channel is active; and

30 if at least one channel is active, transferring video data on said at least one active channel.

23. The method of claim 22, wherein said transferring video data on said at least one active channel comprises:

determining the highest priority channel of said at least one active channel;

performing at least one video data transfer operation in accordance with the activity of said highest priority channel.

24. The method of claim 23, wherein said activity includes at least one of playback or recording.

25. A method for transferring video data to and from at least one hard disc comprising:

dividing said at least one hard disc into slices, said slices either occupied with data or free of data; and

performing a playback operation for a predetermined recorded segment, comprising:

locating a slice of said stored data corresponding to said predetermined recorded segment;

transferring said at least one slice of said stored data from said hard disc; or

performing a record operation comprising:

locating a slice free of data;

transferring a portion of said recorded data to said slice free of data.

26. The method of claim 25, additionally comprising:

creating a table of said slices free of data and updating said table of free slices when said portion of said recorded data has been transferred to slice free of data.

27. A hard disc comprising:

a first area and a second area;

said first area comprising a plurality of divisions configured for being occupied with portions of video data;

said second area including at least one division defining a table for said divisions of said first area not occupied with portions of video data.

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28. The hard disc of claim 27, wherein said first area defines a video data storage area and said second area defines a management area.

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29. The hard disc of claim 28, wherein said divisions are configured for storing portions of video data.

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30. The hard disc of claim 28, wherein said second area comprises a plurality of divisions, said plurality of divisions including data storage for the group comprising: settings, program categories, users and disc headers.

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31. A data transfer system comprising:

a controller configured for supporting multiple nodes and configured for providing an interface to centralized storage, said controller including switched architecture for supporting bidirectional data streaming between said multiple nodes and said centralized storage.

32. The data transfer system of claim 31, additionally comprising multiple nodes on communication with said controller.

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33. The data transfer system of claim 31, additionally comprising centralized storage.

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34. The data transfer system of claim 33, wherein said centralized storage includes at least one storage media.

35. The data transfer system of claim 34, wherein said at least one storage media includes a hard drive unit.

36. A data transfer system comprising:

a plurality of channels;

a server comprising:

a port for receiving data from at least one data source;

a controller interfaced to said port and configured for interfacing with centralized storage, said controller configured for supporting at least one of; a) recording of said received data to said centralized storage; and b) playback of recorded data from said centralized storage, over each of said channels.

37. The data transfer system of claim 36, wherein said at least one of; a) recording of said received data to said centralized storage; and b) playback of recorded data from said centralized storage, over each of said channels is performed independently for each of said channels.

38. The data transfer system of claim 36, wherein said at east one of; a) recording of said received data to said centralized storage; and b) playback of recorded data from said centralized storage includes both (a) and (b).

39. The data transfer system of claim 36, wherein said channels are accessible by nodes.

40. The data transfer system of claim 36, wherein said centralized storage includes at least one storage media.

41. The data transfer system of claim 40, wherein said at least one storage media includes a hard drive unit.

42. A data transfer system comprising:

a controller configured for interfacing with centralized storage and access from any of a plurality of nodes upon receiving at least one signal from one node of said plurality of nodes, said controller configured for facilitating data transfer

between said nodes and said centralized storage upon said receiving at least one signal from at least one node of said plurality of nodes.

43. The data transfer system of claim 42, wherein said configuration for data transfer includes configuration for bidirectional data transfer between said nodes and said centralized storage.

44. The data transfer system of claim 43, wherein said bidirectional data transfer includes media streaming.

45. The data transfer system of claim 43, additionally comprising, a plurality of nodes in communication with said controller.

46. The data transfer system of claim 42, wherein said centralized storage includes at least one storage media.

47. The data transfer system of claim 46, wherein said at least one storage media includes a hard drive unit.

48. A data transfer device comprising:
a system residing on at least one chip, said system configured for bidirectionally transferring digital media data between a plurality of nodes and at least one storage media.

49. The data transfer device of claim 48, wherein said at least one chip is a Very Large Scale Integration (VLSI) device.

50. The data transfer device of claim 49, wherein said VLSI device is configured for performing said bidirectional digital media data transfers with a storage media buffer.

51. The data transfer device of claim 48, wherein said at least one chip includes one chip.

52. The data transfer device of claim 49, wherein said VLSI device is additionally configured for real time multichannel recording of independent video streams onto said single hard drive unit and real time multichannel playback of independent video streams from said hard drive unit, said recording and playback being at least contemporaneous in time.

53. The data transfer device of claim 49, wherein said VLSI device includes:
a controller configured for regulating transfers of said digital media data;
a processor in communication with said controller for communicating instructions to said controller; and
a storage media interface configured for controlling said transfers between said controller and said at least one storage media.

54. The data transfer device of claim 53, wherein said processor includes a RISC processor.

55. The data transfer device of claim 49, wherein said VLSI device additionally comprises: a plurality of paired FIFO buffers, each of pair of FIFO buffers for correspondence with one of said plurality of nodes.

56. The data transfer device of claim 48, wherein said digital media data is selected from the group comprising: video data, audio data or combinations thereof.